

# METHOD AND APPARATUS FOR PROVIDING GROUP INTERACTION VIA COMMUNICATIONS NETWORKS

## 1 FIELD OF THE INVENTION:

2       The present invention relates to a method for applying psychological approaches to  
3 enhancing the quality of group interaction over computer networks, and to software embodying  
4 the aforementioned method operating on a server computer. The server provides a structured on-  
5 line environment which can be used in the operation of virtual meeting rooms, support groups,  
6 business meetings, academic classes, and other customized purposes.

## 7 BACKGROUND

### 8       Problems with Existing Systems of Computerized Group Interaction

9       There are many problems associated with currently available systems of computerized  
10 group interaction. Generally speaking, conventional systems for group interaction (e.g. chat-  
11 rooms) are poor replicas of actual communication in the real world. They are even poorer  
12 imitations of the operation of functional, task-oriented groups. A detailed look at the specific  
13 problems associated with currently available systems of computerized group interaction follows.

14       The main problem with currently available systems of computerized group interaction is  
15 that they do not provide a no way of visualizing all members of the group with whom one is  
16 interacting at the same time. For example, when a person attends a staff meeting at work, she is  
17 usually able to see the speakers and the other staff members. When she hears somebody

1 speaking, she can connect the voice with the speaker, and can usually determine to whom the  
2 speaker is directing his/her comments, as well as how the speaker is feeling and how the listener  
3 is reacting to the message. In chat-rooms, it is difficult to ascertain these things.

4 Another problem with these systems is that communications must usually occur in a  
5 serial manner, one entry at a time, even though this is not the way natural communication in the  
6 real world occurs. To the contrary, many times people have side conversations going on, or they  
7 make short comments while the main speaker is talking, or they send hand-written notes back  
8 and forth while someone has the floor.

9 Another problem with currently available systems is that they do not allow for a new  
10 person to join a closed membership meeting that is already in progress (at the discretion of the  
11 “gatekeeper”) as often happens in real-life situations. For example, a manager from another  
12 office making an unexpected visit may be invited to join an on-going management meeting to  
13 discuss a specific project, and then leave when that discussion is completed.

14 Another problem with currently available systems is that most do not provide the  
15 capacity to view presentation materials at the same time that the group communication is going  
16 on. Most work groups, academic groups, and support groups have materials that are presented  
17 and discussed during meetings.

18 Another problem with these systems is that specially developed clinical tools for teaching  
19 group communication skills (or enhanced work team skills) cannot be utilized during the course  
20 of the group meeting.

1 Another problem with currently available systems of computerized group interaction is  
2 that they do not allow group members to rate themselves and each other on questions relevant to  
3 their progress on goals or their group participation.

4 Another problem with these systems is that they make no provision for taking notes or  
5 “minutes” while participating in the meeting. This is a serious limitation, as usually someone is  
6 asked to take notes during meetings and then is required to type them out for later dissemination  
7 or record-keeping. The ability to take notes is also important for students in a classroom setting,  
8 or people attending professional education seminars.

9 Another problem with currently available systems of computerized group interaction is  
10 that there is no way to transfer confidential work documents or reports between group  
11 participants. For example, participants in a “real-life” management meeting may each have  
12 confidential reports to turn into the boss during the course of that meeting.

13 Another problem is that it is not possible to reserve a meeting room for on-going work on  
14 a large project that requires intermittent attention from different participants over an extended  
15 period of time. For example, in real-life, a certain meeting room could be reserved for a large  
16 project where different employees would come and go as time permitted throughout the week to  
17 continue work on the project.

18 Another problem with currently available systems is that they do not follow a  
19 standardized format across different programs, thereby making voice, video, and written  
20 communication between groups of people difficult if not impossible at times. This is exactly the

1 same problem that sometimes exists when people with different internet service providers (ISPs)  
2 or instant messaging services try to communicate, especially by voice.

3 Yet another problem with these systems is that they do not allow the user to move pieces  
4 of written information from place to place during the interaction. For example, it would be useful  
5 for one participant in a chat-room using a written format to be able to highlight something that  
6 someone else has written earlier in the conversation and then to add to it. This ability to take  
7 pieces of text already written and then build on them would be useful in academic discussions as  
8 well as work-related task groups. Or it would be very useful to be able to take notes during an  
9 electronic work team meeting, and then be able to send these notes or minutes to a central  
10 document.

11 A final problem is that current systems of electronic group interaction do not allow  
12 people outside of the group room to observe the meeting. The ability to broadcast a work team  
13 meeting or a staff meeting to many other employees who were unable to attend would be very  
14 useful. A feature that allowed for observation by outsiders would also be extremely useful when  
15 teaching group dynamics and running structured group programs. People learn a lot via  
16 “observational learning”, and space may not always be available for the numbers of people who  
17 want to participate.

### 18 Problems with Existing Group Discussion Methods over Computer Networks

19 In addition to the above-described problems with conventional computerized group  
20 interaction systems, there are serious problems associated with electronic group discussions in a  
21 more general sense. In an article written by Bridget Murray, “Reinventing Class Discussion

Online”, APA Monitor on Psychology, April, 2000, many pitfalls of discussion groups on the web are outlined. They include a) Students are quickly overwhelmed by too much information that is not organized; b) Students do not have good group communication skills. The writer suggests that specific methods of avoiding these pitfalls are organizing material and teaching specific group communication skills using methods such as role-playing. Unfortunately, most existing websites for discussion groups (or support groups) do not provide adequate organization of material, nor do they provide appropriate opportunities for learning group communication skills.

Another method that is often used in professional training settings to teach group therapy skills is allowing people to observe a live group in action. Observational learning is a powerful way for people to learn social skills, problem solving skills, and group communication skills. Many times in training settings, groups of professionals (and other students) remain behind a one-way mirror, observing the meetings of an ongoing group therapy program. Clearly, the opportunity to observe another group in action is not an option on existing websites.

Another important clinical tool for teaching people social skills and group communication skills is using exercises. One very popular exercise in marital counseling developed by Notarius and Markman in their book, We Can Work It Out, 1993, is having each partner hold three cards, one having a plus sign (+), one having a minus sign (–) and one having a neutral sign (0) written on it. The partners hold up the card that best describes how he or she is feeling as the other partner is speaking. This exercise provides a tremendous amount of feedback to the speaker.

1       The inventor has adapted this exercise for use with groups. She had each group member  
2       make a set of cards. Then group members were asked to hold up the card that best expressed  
3       their reaction to the person who was speaking in the group. This exercise was highly effective in  
4       helping the speaker to pay attention to the reaction of others when speaking. Despite the  
5       effectiveness of various types of exercises as aids to improving group skills, computerized  
6       discussion groups are currently unable to employ these methods.

7       Another important tool for teaching group communication skills is ensuring that all group  
8       members receive appropriate feedback about how they are doing. In many groups, members fill  
9       out rating scales on various relevant points. For example, one group may rate how close they feel  
10      to each other group member. Or they may rate how satisfied they are with the group progress.  
11      This type of feedback can be used to help each group member and to steer the group in a desired  
12      direction.

13      Another kind of feedback that is often obtained from group therapy participants is  
14      information about where the person falls on a standardized measure of some trait or variable. For  
15      example, people who are depressed are often given the Beck Depression Inventory (or some  
16      other measure of depression) at different points throughout the group treatment in order to assess  
17      progress. This information is received by the group therapists who often explain the results of the  
18      assessments to the participant.

19      Additionally, feedback about one's activity level during a group meeting can also provide  
20      essential feedback to the group members and leaders. Specifically, this data can be used to  
21      understand actor effects, partner effects, and relationship effects in the social relations model

1 (Kenny, Interpersonal Perception: A Social Relations Analysis, 1994). However, there is  
2 currently no available system of group interaction that allows for obtaining these types of ratings,  
3 activity level data, and feedback in groups meeting via global communications networks.

4 Another technique that is often used to help teach group dynamics and communication  
5 skills in “real-life” settings is videotaping the people who are engaged in a conversation or role-  
6 playing exercise, and then having those people watch the videotape at a later time. Being able to  
7 watch a videotape of oneself with an eye for understanding how one might improve performance  
8 has been shown to be highly effective. To the inventor’s knowledge there is no web site that  
9 allows for videotaping of oneself while communicating in a group discussion.

10 Another method that is regularly used to improve group communication skills involves  
11 techniques for strengthening group cohesion. Group cohesion is a measure of how close group  
12 members feel to other members of the group and how much they like the group as a whole.  
13 Techniques for strengthening group cohesion often include encouraging group members to  
14 interact together more often in settings outside of the usual group discussion meeting time.  
15 Another technique is having each group member choose a “buddy” that they will talk with  
16 between group sessions if they have questions or problems that arise. Finally, group cohesion  
17 becomes much stronger as the same group of people meet together over time on a regular basis.  
18 While there is one web site that allows people to form their own closed groups (a company  
19 called e-groups), this web site does not provide the necessary structure and guidance to help  
20 group members follow through with any of these methods for strengthening group cohesion.

1 Additionally, the e-groups site suffers from all of the limitations of computerized group  
2 interaction outlined above.

3 In view of the above-described limitations of computerized group interaction and of  
4 computerized group discussions in general, current internet group communication is often  
5 shallow, unstructured and ineffective. Despite these problems, however, millions of people do  
6 use the internet to engage in chat-rooms, discussion groups, and even business meetings. Recent  
7 reports indicate that 40 million people have engaged in chat-rooms on AOL alone.

8 Accordingly, one object of the present invention is to provide a system that solves the  
9 problems with currently available computerized group interaction systems and methods of  
10 computerized group discussion.

## 11 Need For Improved Methods of Providing Structured Group Programs Over Computer 12 Networks

13 Structured programs provide a common focus, method, and setting for teaching  
14 everything from job skills to the "History of Modern Civilization". Academic courses, business  
15 skills training manuals, self-improvement books, "how to" manuals of any kind, business  
16 meetings, bridge clubs, chat-rooms, behavior therapy groups, and community organizations can  
17 all be viewed as structured programs. Most structured programs have a common focus, purpose  
18 or goal; a method or procedure for accomplishing that purpose; and a setting (time and place) for  
19 working through the program. In structured group programs, the participants go through at least  
20 some of the steps of the program in a group setting.



1        Structured programs differ in their degree of regimentation, their specificity of purpose,  
2        and the characteristics of their memberships. For examples, some programs may outline specific  
3        steps that must be taken to accomplish a particular goal (e.g. improving customer service in a  
4        business). Other programs may not have that many rules or special procedures that must be  
5        followed (e.g. a neighborhood book club).

6        Some structured programs are designed for homogenous membership (like a day-care  
7        program for senior citizens); and others are set up for heterogeneous membership (like a class  
8        offered at a community college for teaching computer skills). Some groups are led by  
9        professionals (like a physician-led support group for cancer survivors); while others are led by  
10       lay persons, e.g. Alcoholics Anonymous groups; while still others have no designated leader, e.g.  
11       some chat-rooms, peer groups. Some groups have a constant membership that meets on a regular  
12       basis over time (e.g. a company's Board of Directors) while other groups have a changing  
13       membership and do not meet more than once (a group of people gathered together to learn a new  
14       therapy technique at a continuing education seminar for professionals).

15       Many structured programs require the use of specially prepared materials like workbooks,  
16       blackboards, texts, video players, and other printed materials. Many programs also utilize special  
17       teaching techniques (like lectures, role-playing, live demonstrations and/or special psychological  
18       methods). Many programs require that participants take notes, fill out various forms, turn in  
19       homework or work products, and take tests or other assessments.

20       Most structured group programs have several other requirements. Some programs require  
21       that participants each keep a personal work folder with their own records stored inside (like test

1 results, personal notes, workbooks). Other structured programs require a place where participants  
2 can view presentation materials together in a group setting. Most operating programs require a  
3 method for the group leader to communicate with each of the group participants individually  
4 from time to time. Many programs require that there be a way for group members to meet  
5 outside of regularly scheduled group meetings to work on long-term projects and team  
6 “homework” assignments. An important component of many structured programs involves  
7 providing resources to be used as an adjunct to the materials presented in the program. A system  
8 of informing potential participants about what types of programs are offered, whom they will be  
9 led by, and where and when they will be held is an important requirement for many large group  
10 program delivery systems. And finally, in the case of internet systems of group services delivery,  
11 a security system with password access is required to ensure that participants program materials  
12 and closed group communications are protected.

13 For reasons of convenience, efficiency, and sometimes anonymity, many individuals and  
14 businesses want to be able to attend different types of group activities in virtual meeting spaces  
15 over the internet (e.g. meetings, classes, seminars). However, the existing web sites that provide  
16 group services and structured programs over the internet suffer from all of the same limitations  
17 of group communication systems over computer networks that were outlined above. In addition,  
18 no current system of group system delivery provides a way to meet all of the requirements for  
19 providing structured group programs outlined in this section.

1       What is needed is a web site that combines all of the necessary components for the  
2       successful operation of a large scale group services delivery system which meets the  
3       requirements for effectively providing structured group programs.

#### 4       Special Need For An Internet Structured Group Program Focussed on Personal Goals

5       There are many limitations associated with the kinds of groups that are offered to the  
6       general public both in the “real world” and on the internet. One main limitation is that there is no  
7       group program, either in the real world or on the internet, that is focussed specifically on helping  
8       the general population reach their personal goals. There are many groups that focus on people  
9       who have serious emotional problems or addictions. But many people are averse to participating  
10      in those types of groups because of the stigma attached. Many others do not view themselves as  
11      “emotionally disturbed” or needing “therapy” and therefore do not wish to get involved in the  
12      kinds of groups that are available in the community or on the internet. Still others do not have the  
13      finances to go to professional group therapy sessions, nor the time or the transportation to  
14      commit to community support groups. But the fact remains that most people could benefit  
15      greatly from participating in a structured group program focussed on helping people reach their  
16      personal goals.

17      There are many reasons why focussing on one’s personal goals is important.  
18      Psychological research has found that working toward goals has a positive effect on health, self-  
19      esteem, and psychological well-being. Every person from every ethnic group and nation has  
20      some goal that they would like to accomplish. Some people may not know what they want;

1 others may want too much. Some people may not know how to go about attaining their goals,  
2 while others know exactly what they need to do, but cannot bring themselves to do it. Still other  
3 people have a solid understanding of what they would like to accomplish, but are unable to  
4 locate the resources needed to actualize their goals. Probably everyone has been in each of these  
5 places at different points in their lives. Struggling to accomplish one's goals is clearly a universal  
6 experience. But there is currently no place where relatively "healthy" people can meet together  
7 to get the support and structure that they need to help them reach their personal goals.

8 Accordingly, one object of the present invention is to provide an internet site offering  
9 structured group programs focussed on reaching personal goals to the general public. To  
10 overcome all of the previously outlined problems with computerized group communication,  
11 these programs would have to be offered in conjunction with the system of computerized group  
12 communication embodied in this invention in order to be effective.

13 Need For An Enhanced System For Creating Virtual Meeting Spaces Where  
14 Conferences, Seminars & Meetings Can Be Held Over Computer Networks

15 Recent increases in the productivity of American workers have been attributed to a focus  
16 on teamwork. The emphasis on improving communication between teams of designers,  
17 production workers, marketing staff, suppliers, and customers has led to an increased necessity  
18 for meetings. The greater frequency of meetings involving more and more people has led to  
19 higher travel and office space costs (to allow for conference rooms), as well as decreased  
20 productivity of some workers. Who hasn't heard employees (and even managers) complain that

1 all they do all day long is go to meetings, so they never get any work done during normal  
2 business hours? In addition to increasing necessity for meeting space, virtually all businesses,  
3 agencies, and organizations have the need at one time or another to present a structured set of  
4 materials to their employees or clients in the form of training manuals, workbooks, or programs.  
5 Sometimes special seminar presenters are involved in presenting structured materials in a lecture  
6 or seminar format, but usually some written materials are disseminated as well.

7 Many businesses and individuals would like to be able to attend meetings, seminars, get-  
8 together, and classes via their computers. While there are sites for groups to meet over the  
9 internet (e.g., e-groups and voicechat), these sites suffer from many of the limitations of  
10 computerized group interaction systems outlined above. Specifically, these systems do not allow  
11 users to “see” the participants with whom they are interacting or to share on-line program  
12 materials with them. While expensive teamware and virtual office systems are available for use  
13 over computerized networks, these systems also suffer from many of the limitations of  
14 computerized group interaction systems outlined above. Existing teleconferencing systems  
15 provide an enhanced way for some meetings to occur electronically, but they generally do not  
16 allow for sharing documents while at the same time viewing the other participants involved in  
17 the meetings. The popularity of on-line discussion groups, chat-rooms and instant messaging  
18 services also is an indication that individuals enjoy the chance to “meet” with classmates,  
19 friends, family, and others over computer networks. But chat-rooms and instant messaging  
20 services also suffer from the limitations of computerized group interaction systems outlined  
21 above.

1 If better methods for holding meetings over computerized networks existed, businesses  
2 would reap big rewards. Virtual meeting spaces would allow users to stay at their workstations  
3 when attending meetings, thereby saving time, travel costs, and office expenses. Attending  
4 meetings while remaining at their workstation (or from a job site) would also improve worker  
5 productivity and company efficiency, as phones would not have to be left unanswered, and  
6 employees would not be left without supervisory presence while managers attend meetings. In  
7 addition, persons who have to attend consecutive meetings in disparate locations would be able  
8 to attend both meetings without a problem.

9 Accordingly, it is an object of the present invention is to provide a system that is free of  
10 the problems outlined above for businesses to hold meetings over computer networks and  
11 thereby reap the benefits of increased productivity.

## 12 SUMMARY OF THE INVENTION

13 According to a first aspect of the invention a server is provided for communicating  
14 content between a group of networked client computers over a communications medium and  
15 displaying communications flows identifying a content originator and a content receiver. The  
16 server includes a memory, a processor storing and retrieving instructions from the memory, and a  
17 network interface operably connecting the processor to the communications medium. A  
18 communications module receives content from an originating computer and transmitting the  
19 content to at least one target computer. Also provided is a graphical communication flow module  
20 integrated with the communications module and providing to each of the client computers a

1 graphical representation of the group of networked computers, the graphical communication flow  
2 module graphically depicting communication flows showing the originating and target  
3 computer(s) corresponding to each content transmission by the communications interface.

4 According to one aspect of the invention, the communications module transmits content  
5 selected from the group including voice, video and text.

6 According to another aspect of the invention, a voice communications monitor having a  
7 plurality of voice communication flags is provided, with one flag corresponding to each client  
8 computer, and only one flag being active at any given time. The communications module verifies  
9 a status of the plurality of voice communication flags in response to a voice content transmission  
10 request for a given client computer, and activates the corresponding voice communication flag if  
11 none of the voice communication flags is active, the communications interface processing voice  
12 content transmission requests only from a client computer whose corresponding voice  
13 communication flag is active.

14 According to another aspect of the invention, a virtual office system is disclosed  
15 including a server computer having a nonvolatile storage medium, a plurality of client computers  
16 connected to the server computer via a communications medium. A graphical interface displays  
17 data to the client computers, and a virtual floorplan is stored on the nonvolatile storage medium  
18 and defines a plurality of virtual offices. The virtual floorplan is displayed to the client  
19 computers by the graphical interface. A scheduler is provided which stores scheduling  
20 information on the nonvolatile storage medium. The scheduling information is used for  
21 scheduling the plurality of virtual offices, and includes a directory identifying a time, meeting

1 identification information, and virtual office information uniquely identifying a given virtual  
2 office. The scheduling information is displayed to the client computers by the graphical  
3 interface.

4 A communications interface transmits content from an originating client computer to at  
5 least one destination client computer, a graphical communication flow module graphically  
6 depicting to each client computer a representation of each of the participants of the meeting, the  
7 graphical communication flow module graphically depicting communication flows to all of the  
8 client computers showing the originating and destination client of content transmitted by the  
9 communications interface.

10 According to yet another aspect of the invention, a method is disclosed for conducting  
11 on-line training using a server computer connected to a plurality of client computers. The method  
12 includes a step of providing a virtual meeting room on the server computer which is accessible to  
13 the client computers, graphically depicting a representation the virtual meeting room and each of  
14 the client computer users accessing the virtual meeting room, communicating content from an  
15 originating client computer to at least one target client computer using a messaging interface,  
16 graphically depicting to each of the client computers a communications flow showing the  
17 originating and target client computer(s) of content transmitted by the messaging interface; and  
18 providing a simultaneous access window for displaying presentation materials to each of the  
19 client computers accessing the virtual room. The above-described method is used to facilitate a  
20 structured discussion using the messaging system and the presentation materials displayed in the  
21 simultaneous access window.



1 A further aspect of the invention relates to an internet web site residing on a host and  
2 providing a structured communications environment for a plurality of client computers. The  
3 internet web site includes a graphical interface displaying a plurality of virtual meeting rooms, a  
4 given virtual meeting room simultaneously accessible to selected ones of the client computers,  
5 and a communications interface receiving content from an originating client computer and  
6 displaying the content to at least one destination client computer. The graphical interface  
7 displays within each virtual meeting room a representation of the client computers accessing the  
8 corresponding virtual meeting room, and graphically depicts communication flows showing the  
9 originating and destination client computer(s) corresponding to each content transmission by the  
10 communications interface.

11 Yet another aspect of the invention relates to a memory medium storing software for a  
12 communications system, including a graphical interface for displaying a plurality of virtual  
13 meeting rooms, a given virtual meeting room being simultaneously accessible to selected ones of  
14 the client computers. The software further includes a communications interface for receiving  
15 content from an originating client computer and displaying the content to at least one destination  
16 client computer. The graphical interface displays within each virtual meeting room a  
17 representation of the client computers accessing the corresponding virtual meeting room, and  
18 graphically depicts communication flows showing the originating and destination client  
19 computer(s) corresponding to each content transmission by the communications interface.

20 These and other aspects of the invention are described below in the detailed description  
21 of the preferred embodiments.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram showing the functional aspects of the software used to implement the group communications system of the present invention;

FIG. 2 is a block diagram the showing the group communications system of the present invention interface implemented in a client-server model;

FIG. 3A and 3B are block diagrams of a personal computer on which the software of FIG. 1 executes;

FIG. 4 is a sample screen layout of the group communications system of the present invention;

FIGs. 5A – 5C are sample screen layouts showing types of interaction that may simultaneously occur in the interaction matrix;

FIGs. 6A-6C are sample screen layouts used to explain how content is transferred in the system of the present invention;

FIG. 7 is an example of a Member's Personal Report showing what messages that member has sent and received as measured by the activity counter;

FIG. 8 is an example of a feedback template used by a group leader to enter a feedback question and provide a rating scale or a series of multiple choice responses;

FIG. 9 is a sample Personal Feedback Report;

FIGs. 10-12 show alternate layouts of the interaction matrix;

FIG. 13 is a screen print showing sample drop-boxes used to access to different types of files/programs in the system;

1 FIGs. 14 and 15 show two different scroll formats used to scroll through snapshots of  
2 previous communications;

3 FIGs. 16A and 16B show sample assessment questionnaires;

4 FIG. 16C is an example of the Leader's Professional Report of the Post-Group  
5 Assessment Questionnaire;

6 FIGs. 17A and 17B are sample layouts of a virtual Floor Plan graphically depicting a  
7 number of virtual rooms;

8 FIG. 18 is a sample layout of an office depicting employees in cubicles who will be  
9 entering two different virtual meeting rooms on the system;

10 FIG. 19 is a screen print showing a group viewing presentation materials together in the  
11 shared access window;

12 FIG. 20 is a screen print showing group members viewing a role-play exercise while  
13 discussing it in the interaction matrix;

14 FIG. 21A and 21B are screen prints showing group members working on a shared  
15 document while discussing it in the interaction matrix.;

16 FIG. 22 is a chart showing examples of how components of the system may be  
17 customized;

18 FIGs. 23A and 23B show sample on-line workbooks according to the present invention;

19 FIGs. 24A and 24B show sample on-line training materials according to the present  
20 invention; and

1 FIGs. 25A-25C show sample screen prints of the scheduler used to schedule meeting  
2 rooms and on-line training sessions.

3 FIG. 26 shows a sample screen print of a bulletin board for a closed membership group.

4 FIGs 27A and 27B show sample screen prints of a group using a chalkboard during a  
5 group meeting.

## 6 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

7 The present invention provides an innovative system for enhancing the quality of group  
8 interaction over computer networks. The system can be used in the operation of chat rooms,  
9 support groups, business meetings, academic classes, training seminars, and other customized  
10 consumer and business purposes. The system can be engineered to operate over the internet, on  
11 internal business networks, and on personal computers in the home.

12 The system is designed to overcome the problems with existing systems of computerized  
13 group communication outlined in the background section of this application. In general terms,  
14 the system allows for the simultaneous exchange of voice, written, and iconographic messages in  
15 real-time; and it allows for viewing and working on structured group programs and shared  
16 documents while continuing to "see" the members of the group.

17 FIG. 1 is a block diagram showing the functional aspects of the software used to  
18 implement the group communications system of the present invention, generally designated 100.  
19 The group communications system 100 consists of a control module 102, a communications

1 module 104 (text, voice, video), and a graphical communications flow module 110. Each of the  
2 respective functional modules depicted in FIG. 1 will be discussed in detail below.

3 As explained above, one of the shortcomings of existing internet groups relates to the  
4 difficulties in visualizing the group communications, and in particular a difficulty in determining  
5 the target of a particular comment.

6 In contrast, the system 100 enables group members to quickly ascertain who the current  
7 speaker is and who the target recipients are. As will be explain below, the graphical  
8 communications module 110 provides a graphical representation of each of the participants in a  
9 conversation, and graphically depicts the communications flows between the participants. The  
10 system provides participants with the ability to give and receive on-going feedback during the  
11 group session without interrupting the group process.

12 The communications module 104 supports at least one of text, voice and visual (video)  
13 communication, including combinations thereof. The system 100 may optionally include a  
14 feedback module 112 and a library 114 which facilitate participants to provide ongoing feedback.  
15 The library 114, may contain a variety of feedback expressions including graphical icons  
16 (emoticons, text expressions, and sound clips). In use, the user selects a feedback expression  
17 from the library 114 using the feedback module 112 and send it to one or more desired users. For  
18 example, if Sally is talking, and Mary wants to ask her a question, Mary can indicate this by  
19 sending Sally a question mark “?” or the like.

20 As will further be described below, the feedback module 112 enables group members to  
21 give/receive feedback regarding the group process and to specific statements of group members.

1 For example, group members may send positive (+), negative (-), or neutral (0) reactions to other  
2 group members.

3 Moreover, the system 100 provides a way for members to “whisper” to one another, i.e.,  
4 pass notes during a meeting. The notes may be either public notes visible by all members or  
5 private notes visible only by the intended recipient.

6 The feedback module 112 includes an editor for creating customized feedback  
7 expressions including graphical icons (emoticons, text expressions, and sound clips). The newly  
8 created (custom) feedback expressions may be stored in the library 114 or other storage medium.

9 FIG. 2 shows the group communications system 100 implemented as a web site or web  
10 portal, including plural personal computers 200 which communicate with a server 202 over a  
11 communications medium such as the internet 204. One of ordinary skill in the art will appreciate  
12 that the configuration illustrated in FIG. 2 is applicable to any networked environment, such as a  
13 local area or wide area network or the like.

14 FIG. 3A is a block diagram providing detail of the personal computer 200 of FIG. 2.  
15 Notably, each personal computer (PC) 200 is a conventional personal computer having a  
16 processor, a memory and an operating system such as Windows ME by the Microsoft  
17 Corporation. The personal computer (client) 200 is provided with a modem 310 or like network  
18 interface. The PC 200 is further provided with an input device 300 such as a keyboard, a mouse  
19 or the like.

1 As will be described below, the communications module 104 may optionally support  
2 voice communications, in which case the PC 200 is provided with a speaker 302 and a  
3 microphone 304.

4 As will be described below, the communications module 104 may optionally support  
5 video communications, in which case the PC 200 is provided with a web cam 306 or the like  
6 capable of recording video. Preferably, the web cam 306 records video in a compressed format,  
7 or the recorded video may be compressed by software executing on the PC 200.

8 FIG. 3B is a block diagram providing detail of the server computer 202 of FIG. 2.  
9 Notably, the server 202 is a conventional personal computer having a processor, a memory and  
10 an operating system such as Windows ME by the Microsoft Corporation. The server computer  
11 202 is provided with a modem 310 or like network interface.

12 The system 100 is specifically designed to enhance the quality of group interaction in  
13 four major ways: 1) by providing a visual representation of simultaneous written and voice  
14 communications occurring between group members throughout a computer-based meeting; 2) by  
15 building continuously-accessible virtual meeting places where group interactions can occur over  
16 time; 3) by enabling the group members to access group documents, blackboards, workbooks,  
17 and other internet sites while simultaneously engaging in the group discussion; and 4) by  
18 creating structured group programs that can be "played" on the system when desired.

19 The system 100 is compatible with conventional PC's 200 including personal digital  
20 assistants (PDA's) and the like network compatible devices. The system of the present invention  
21 makes it possible to deliver computerized group services in a realistic and multi-faceted way,

1 overcoming many of the limitations of currently available systems of computerized group  
2 interaction. The specific design features of the system (with references to the specific problems  
3 that they address) are described below.

4 FIG. 4 is a sample screen layout 400 showing how the system 100 appears to a user  
5 during participation in a group activity. The screen 400 may be logically divided into a group  
6 interaction block 402, communications/transfer control center block 404, and a simultaneous  
7 access window block 406.

8 The system 100 may be operated in a number of different modes, such as an operator  
9 mode, a participant mode, or a programmer mode. The operator mode is used by the person who  
10 "owns" the system 100 space or has the authority as "leader" or "Boss" or "Manager" (through  
11 password access) to set how the system will operate during any particular group meeting. The  
12 Participant Mode is used by all people who participate in group activities using the system, and  
13 the Programmer Mode is used by the individual(s) creating new structured group programs or  
14 virtual group meeting places for use on the system.

15 Each of these different modes of operation have access to different files/programs stored  
16 in the system. The participant may enter website wide programs (like open chat-rooms),  
17 individual accessed files (like a personal workbook), and shared group-specific programs/files  
18 (like shared group documents). The Leader may enter the general website programs, the special  
19 Leader accessed files, the shared group-specific files, and the programming files. The  
20 programmer has access to all the modes and all the files when creating new group programs or  
21 engineering virtual group meeting spaces using the system. FIG. 13 is a sample screen print



1 showing drop-boxes used to provide access to each of the four types of files/programs in the  
2 system.

### 3 The Interaction Block

4 The graphical communications flow module 410 (FIG. 1) controls the interaction block  
5 402, including an interaction matrix 408 used to illustrate the various group communications.  
6 The interaction matrix 408 enables members to view the entire group at all times and to observe  
7 simultaneous voice, written, and iconographic communications occurring between group  
8 members throughout a computer-based meeting in real-time.

9 In the presently preferred configuration of the interaction matrix 408, each group  
10 participant is graphically represented by an identity place box 410 which signifies his/her "seat"  
11 in the group. Other configurations will be described in later sections.

12 The identity place box 410 may have a participant's name on it and/or may include a  
13 static photo of the participant or a dynamic video image. The identity place box 410 enables each  
14 group member to be identified by all other participants in the group, and importantly, may  
15 provide a visual indication of who the current speaker(s) are. The default number of "seats" 410  
16 available in the interaction matrix 408 can be set at a standard number.

17 To facilitate the group interaction, the Leader can assign a fixed seating arrangement,  
18 with each participant occupying the same seat 410 in each meeting. The interaction matrix 408  
19 can be configured to provide an audio alert to a participant to signal a message or communication  
20 directed toward that member.

1 In addition to the respective identity place boxes 410, the interaction matrix 408 further  
2 includes a group box indicated by a "G" in FIG. 4, whose purpose will be described in detail  
3 below. Further still, the interaction matrix 408 may be provided with on-screen "buttons" 411  
4 used to send different types of messages to other group members, to save and clear sent  
5 messages, to exit the screen, and to select/send written material from one place to another within  
6 the system. This feature is discussed in further detail later in document.

7 In FIG. 4, the interaction matrix 408 is set in an audiovisual format where each group  
8 member appears live via personal web cam 306 in his/her box 410 in the interaction matrix 408.

9 One of ordinary skill in the art will appreciate that a static image, such as a digitized  
10 photograph or the like may be displayed in the box 410 in place of a live video image.

11 The group participants may communicate in a variety of formats such as Voice Only,  
12 Written Only, Audio/Written, Video/Voice, and combinations of these formats. Regardless of the  
13 communications media (voice, text or combination thereof) used to communicate, the graphical  
14 communications module 110 provides a visual representation of the communications flows  
15 showing the sender and recipient of each communication.

16 Each of the blocks (402, 404, 406) of the system 100 may be individually adjusted and/or  
17 moved by the user so as to make more room for other blocks. For example, the simultaneous  
18 access window 406 can be moved to rest on top of the interaction matrix 408 and  
19 communications transfer center 404. This provides the full width of the screen for purposes of  
20 working on full-size documents.

1        There are several also several different configurations of the system: Large Group  
2 Configuration (when group size exceeds 10 participants) (FIG. 10); Conference Configuration  
3 (FIG. 11); and interaction matrix only configuration (FIG. 12).

4        Response Matrix: The interaction block 402 further includes a Response Matrix 412  
5 which provides a list of icons or emoticons 414-a (e.g. facial expressions showing different  
6 emotions); sounds 414-b (like a drum roll); and pre-defined text 414-c arranged under different  
7 headings (e.g. "group process terms" or "response styles"); and blank word bubbles, i.e., circular  
8 spaces which can be filled in with whatever short message the participant chooses. The various  
9 feedback expressions (icons, sounds, text messages, are all stored within library 114 (FIG. 1).

10        An example of a pre-defined text response 414-c is "detective" from the category  
11 "response styles". In order to send the selected icon 414-a, sound 414-b, or pre-defined text 414-  
12 c response, the participant simply selects an item in the response matrix 412 (using a pointing  
13 device such as a mouse) and specifies the recipient 410.

14        If desired, a member may place an emoticon 414-a on his/her own box 410. Thus, for  
15 example, a member may place a "happy face" on his box 410 to show the group that he is happy.

16        Personal Activity Box: Further still, the interaction block 402 includes a personal activity  
17 box 420 which enables a user to send and receive hidden written messages from other group  
18 members, as well as to write and save private notes taken during the meeting. The written  
19 messages may be public or hidden messages. Public or open written messages may be main  
20 messages or side messages. Participants may also send hidden messages consisting of icons  
21 selected from the response matrix 412.

1 A plurality of on-screen “buttons” 421 may be provided to indicate when a participant  
2 has received a hidden message (“Messages”), to allow participant to write notes (“Notes”), and  
3 save and send material from the Personal Activity Box 420.

4 In FIG. 12, the Personal Activity Box 420 may also be used to prompt and display out  
5 assessment measures, to receive feedback reports, and to scroll back through group interactions  
6 as well take notes and send written messages.

7 As described above, the Interaction matrix 408 (communications module 104) supports  
8 voice, written, and iconographic communications. Written communications include Main  
9 Comments (communications which directly relate to the topic of discussion), Side Comments  
10 (communications which indirectly relate to the topic of discussion), and Hidden Messages, each  
11 of which is graphically depicted in the interaction matrix 408 (via the graphical communications  
12 flow module 110 (FIG. 1).

13 Iconographic responses consist of icons, sounds and one word icons that are selected  
14 from the response matrix 412. These communications are referred to as “Responses” when they  
15 are sent from one person to another in the Interaction matrix 408. They are referred to as “Self-  
16 Expressions” or “Self-Statements” when they are exhibited in the person’s own box 410.

17 The Interaction matrix 408 displays communication flows graphically using a line or the  
18 like connecting the sender’s identity place box 410 with the receiver’s identity place box 410.  
19 See, FIGs. 5A-5C.

20 Optionally, an activity counter 116 (FIG. 1) is provided to record the number of times  
21 each participant sends or receives each type of message. For example, the activity counter 116

1 may record the number of response messages sent and received, the number of written messages  
2 sent and received, etc.

3 With respect to voice communications, the activity counter 116 further measures the  
4 amount of group time each member consumes (“air-time”). Notably, the activity counter 116 will  
5 record how long a particular participant speaks, as well as how long the participant is spoken to.  
6 This type of information provides data for determining a participant’s Actor Effects (how much  
7 she talks), Partner Effects (how much talking she elicits) and any relationship Effects (does the  
8 participant talk a lot only to a specific participant from whom she also elicits a lot of talking?).

9 A statistical methods module 118 (FIG. 1) is optionally provided to process the statistical  
10 information collected by the activity counter 116.

11 FIGs. 5A-5C show many of the possible types of interactions that may simultaneously  
12 occur in the interaction matrix 408 during a computerized group meeting. In FIGs. 5A-5C group  
13 members are communicating using voice communications. To facilitate understanding of the  
14 group interaction, the text of the words that group leader is speaking are written in box 522.  
15 However, in the actual operation of the interaction matrix 408 in voice mode, the text for voice  
16 communications does not appear. It is provided here for explanatory purposes only.

17 What the “G” means: In FIGs. 5A-5C, group leader 410-a is verbally addressing the  
18 Group G, as designated by a line from his box to the “G”. Each participant may quickly ascertain  
19 the current speaker by seeing the coloring or highlighting (not illustrated) of the speakers box  
20 and by the line or arrow drawn from the speakers box to the Group G.

1        What the different border and arrow types mean: As further shown in FIG. 5A, Mary  
2    410-b is indicating to the group that she is feeling “Happy”, the word “happy” inside the box  
3    (along with her video-transmitted live image). In FIG. 5B, Susan 410-c is indicating to Mary  
4    410-b that she is also feeling happy by the response “Me Too” and the arrow from her box 410-c  
5    to Mary’s box 410-b.

6        In the provided illustrations, voice communications are indicated by triple lined borders  
7    around the place-box or “seat” 410 of the speaker as well as triple lined arrow to show the  
8    direction of the communication.

9        According to a presently preferred embodiment, the arrows indicate communication  
10   between members, and are visible to all of the group participants. However, one of ordinary skill  
11   in the art will readily appreciate that there are numerous ways to graphically illustrate  
12   communication flows.

13       Main written messages are visible to all of the group members, and are identified in a  
14   distinct manner in the interaction matrix 408. For example, in FIG. 5B Amy 410-d is shown  
15   sending a main written message to Mary 410-b, as indicated by the color of both of the  
16   respective boxes (not illustrated), the solid black line and arrow 416 drawn there between.  
17   However, one of ordinary skill in the art will appreciate that there are many ways of graphically  
18   illustrating a sender and a receiver of a message.

19       Side messages (comments) are messages which do not directly relate to the topic or  
20   thread being discussed by the group. Side comments are distinguished from main messages by  
21   the use of a dashed line and arrow for purposes of illustration, and hidden messages are

1 represented by dotted lines. See, FIG. 5B. The choice as to whether to send a written main  
2 comment or a side written comment is made by the user by clicking on the desired button 411 in  
3 the interaction matrix 408.

4 Hidden messages are a third type of written messages. As the name implies, the content  
5 of the hidden message is hidden from the group, and appears only in Don's 410-f Personal  
6 Activity Box 420 (FIG. 5B). If desired, the interaction matrix may be configured to display the  
7 communication flows of all messages, including hidden messages. Thus, in FIG. 5B, the content  
8 of Jeff's 410-e hidden message is visible only to Don 410-f, but the communication flow (dotted  
9 line and arrow) is visible to all of the group.

10 Speaking Control: According to the presently preferred embodiment, only one participant  
11 may address the group at a time using voice communications. Notably, the voice module 106  
12 (FIG. 1) providing for each virtual meeting room a plurality of voice communication flags, one  
13 flag corresponding to each participant (client computer), with only one flag being active in any  
14 virtual room at any given time.

15 In response to a voice communications request by a participant, the voice module 106  
16 verifies a status of the voice communication flags within a given virtual room. If none of the  
17 flags within the virtual room are active, then the voice module 106 activates the corresponding  
18 voice communications flag, thereby enabling the participant to transmit voice messages.

19 To signal a desire to address the group, a participant requests activation of the voice  
20 communication flag by selecting a Voice icon (button) 411 (FIG. 4). If the voice communication  
21 flag is available, then the voice module 106 activates the corresponding voice communications

1 flag, enabling the requesting participant to address the group using voice communications. When  
2 a participant is done talking he/she may relinquish control of the voice communication flag by  
3 deselecting the Voice icon 411.

4 According to a presently preferred embodiment, the voice module 106 automatically  
5 resets the voice communication flag a predetermined amount of time after the last  
6 communication. Members activate and reset (deactivate) the voice communication flag by  
7 clicking on the Voice icon 411. However, if a user fails to de-select the Voice icon 411 when  
8 finished speaking, the voice module 106 will automatically reset the voice communication flag  
9 after a predetermined time, e.g., 10 seconds, have elapsed without a voice transmission.

10 Optionally, the group leader may configure the voice module 106 to allocate fixed length  
11 speaking slots, wherein the voice communication flag is automatically reset after a  
12 predetermined amount of time has expired. Moreover, the leader may extend the amount of time  
13 allocated to a participant on-the-fly, by selecting a Voice extend icon 411 prior to the expiration  
14 of the predetermined amount of time.

15 Preferably, the interaction matrix includes a timer (not illustrated) which displays to each  
16 participant the amount of time remaining for control of the voice communication flag.

17 The voice module 106 may alternatively be implemented without the use of a voice  
18 communication flag, in which case, the user initiates speaking by selecting the Voice icon 411,  
19 and designating the intended recipient(s) 410. In this mode, group participants would have to rely  
20 on their communication skills to limit interrupting and talking over someone else, much as they  
21 must do so in "real-world" conversation.



1 Non-speaking participant's, i.e., those participant's having a non-active voice  
2 communication flag are free to communicate with individual members using text messages  
3 (public or private). Notably, the voice communication flag is only necessary when using voice  
4 communications, and is not implemented in Written Only, Video/Written formats.

5 Leader Function of Resetting the Flag: The group leader is given preference in obtaining  
6 the voice communication flag, and may regain control of the voice communication flag at any  
7 time by revoking the flag from a participant by, for example, selecting a revoke icon 411.  
8 Moreover, the leader may suspend a participants ability to obtain the voice communication flag  
9 by, for example, selecting a suspend icon 411 and then selecting the appropriate participant 410.

10 Likewise, the Leader may suspend the group's ability to communicate by selecting  
11 suspend, and then selecting "G" for group in the interaction matrix 408.

12 How the different types of messages are produced: In order to speak to the group, the  
13 leader 410-a clicks on Voice button 411 on the interaction matrix 408 and then clicks on the "G"  
14 button. The interaction matrix 408 graphically depicts the current speaker (leader 410-a in FIG.  
15 5A) by changing the color of the speaker's box 410 box (color not illustrated) and through the  
16 use of an arrow from the speaker's "seat" to the "G" box in the middle of the interaction matrix  
17 408.

18 Self Statements from Response Matrix: Members are able to provide self-statements by,  
19 for example, placing an emoticon 414-a on his/her place box 410. Thus, in FIG. 5A Mary 410-b  
20 indicates that she is feeling "happy" by clicking on the "Happy" word 414-c in the response

1 matrix 412 and then clicking on her own “seat”. This makes the word “happy” appear in her box  
2 and colors her box lavender (color not illustrated).

3 In the present illustration, the self statement is indicated by a hatched border around the  
4 participant’s box making the statement with the icon from the response matrix 412 appearing in  
5 that participant’s box. However, one of ordinary skill in the art will appreciate that there are  
6 many different ways to graphically illustrate such statements, and the specific illustration is  
7 merely provided as an example.

8 Response Messages from Response Matrix: Members provide Responses by clicking on  
9 the item in the response matrix 412 and then clicking on the box of the selected recipient. Thus,  
10 for example, Susan 410-c may indicate that she is also feeling happy by clicking on the  
11 freeform box 414-d (FIG. 4), typing the desired text (“Me Too”), and then clicking on Mary’s  
12 box 410-b. This makes Susan’s box 410-c a green color (not illustrated) and produces an arrow  
13 with the words “ME Too” on it pointing to Mary’s box. In the present illustration, responses  
14 from the response matrix 412 are indicated by a hatched border around the participants box 410  
15 and a hatched arrow.

16 Side messages: Group members may provide feedback to other members in the form of  
17 side messages. The choice as to whether to send a Written (Main) message or a Written (Side)  
18 message is made by the participant by clicking on the appropriate button 411 on the interaction  
19 matrix 408. Side messages are seen by all of the group members. For example, in FIG. 5B Amy  
20 410-d sends a side written message to Mary 410-b by clicking on the side button 411, typing her  
21 message in her Personal Activity Box 420, and then clicking Mary’s box 410-b. This causes

1 makes Amy's box turn gray (not illustrated) and produces the dotted arrow pointing from Amy's  
2 box 410-d to Mary's box 410-b.

3 Hidden message: Group members may further send private messages to one another. The  
4 text of private messages is visible only to the recipient, but the communication flow between  
5 members is displayed. For example, in FIG. 5B Jeff 410-e sends Don 410-f a hidden message by  
6 clicking on the "Hidden Message" icon (Button) 411, typing a message in his Personal Activity  
7 Box 420, and then clicking on Don's box 410-f. This causes red diagonal lines (color not  
8 illustrated) to appear in the senders "seat" and a red dotted arrow (color not illustrated) flowing  
9 from Jeff's seat to Don's seat to appear in the matrix as well as sending the actual hidden  
10 message to Don's Personal Activity Box 420. In this illustration, hidden messages are indicated  
11 by dotted box border and dotted arrow.

12 Alternatively, the system can be set so that no visual display appears when hidden  
13 messages are sent. The procedure for sending hidden messages remains the same in this option.  
14 But participants can send hidden messages to each other in this option without anyone else  
15 knowing. The Leader selects whether or not hidden messages will be displayed in the interaction  
16 matrix 408.

17 Clear & Save Buttons: According to a presently preferred embodiment, the interaction  
18 matrix 408 automatically clears the graphical representations of the communications flows after  
19 a predetermined amount of time has elapsed. For example, the arrows and color changes in the  
20 boxes in the interaction matrix 408 may be programmed to automatically disappear within 10  
21 seconds of completing the message.

1 Alternatively, user's may manually clear a communications flow by selecting a "clear"  
2 button 421, and then clicking on the item the original sender wants to clear. User's may also  
3 "save" their messages by selecting the "save" button 421 and clicking on the message the  
4 original sender wants to save. Further, the Group Leader may be provided with the ability to  
5 clear any group member's message. According to this aspect of the present invention, the  
6 Leader's box is enabled to use the "save" and "clear" buttons on any message sent within the  
7 Interaction matrix 408.

8 All group members 410 see the communication flows (color changes and arrows),  
9 including the communication flows representing hidden messages. However, depending on the  
10 type of message, the content of the hidden message may only available to the recipient.

11 Optionally, the group leader may be provided with the ability to view hidden messages.

12 Exit Function: When a participant wants to exit the group interaction matrix 408, he/she  
13 simply clicks on an "exit" button 411. Also, the leader can force a member out ("boot") by  
14 clicking the exit button 411 and then the participants "seat" 410. This is an important feature  
15 because sometimes participants can become unruly or abusive, and the Leader must have a way  
16 to make them leave the group. (See FIG. 5B).

17 Scroll function: The interaction matrix 408 is provided with a scroll icon (button) 421  
18 (FIG. 4) which enables a member to scroll back through all of the transactions that have occurred  
19 during the meeting and these transactions will appear in the personal activity box.

20 Scroll Formats. According to another aspect of the invention a variety of scroll formats  
21 are provided. One scroll format includes a small interaction matrix which indicates the message

1 sender and receiver with an adjacent text message describing type of message was sent. (FIG.  
2 14). Another scroll format is “text only” (FIG. 15) and provides text describing who the sender  
3 and receiver are by name as well as what type of message was sent.

4 Writing Notes in Personal Activity Box: A participant can take personal notes by, for  
5 example, clicking on the NOTES button 421 (FIG. 5C) and typing notes in the personal activity  
6 box.420. This feature provides every group member a “notepad” of sorts to write notes about the  
7 process for their own benefit.

#### 8 Content Transfer Function:

9 A content transfer feature enables participants to select text from one component of the  
10 system and send a copy of it to another component. This feature enables participants to view a  
11 document in the simultaneous access window 406, select a certain passage from that document,  
12 using the pointing device 300 (FIG. 3), and then send a copy of the selected passage to his/her  
13 personal activity box 420. Subsequently, the selected passage may be sent as a written message  
14 to members of the group. This feature also enables a member to scroll back through the written  
15 messages that have occurred throughout a group meeting, select a particular statement, send a  
16 copy of it to his/her personal activity box 420, whereupon it may be incorporated into the  
17 ongoing dialogue of the group. In other words, the members may “remind” the group of earlier  
18 statements (verbatim), without the need to re-type the dialogue.

19 In operation, content is transferred by clicking on the select-send button 421 (FIG. 6A),  
20 selecting the desired passage using the pointing device (mouse) 300, and then clicking on the  
21 place icon 410 on the screen where the content is to be sent.

1 In FIG. 6A, a user has selected text 602 from the presentation material on Taking  
2 Complaints which is indicated by the dotted box around the selected passage in the Simultaneous  
3 Access window 406.

4 In FIG. 6B, the user has pasted the passage 602 into his personal activity box 420 and has  
5 edited the passage to send as a written message into the interaction matrix 408.

6 FIG. 6C shows the user's comment in his "seat" 410-e on the interaction matrix 408  
7 where he is asking the Leader, 410-a, a question related to the passage.

8 Counter Module: As shown in FIG. 1, the system 100 is provided with an activity  
9 counter 116 for counting the number and type of messages each participant sends or receives.  
10 For example, the Counter 116 may record that a particular user sent 5 voice messages, 3 hidden  
11 messages and 2 Responses during the meeting; and that she received 3 voice messages, 0 hidden  
12 messages and 5 Responses from others. The activity counter 116 further measures the amount of  
13 group time each member consumes ("air-time"). That is, with respect to Voice messages, a timer  
14 will record how long a particular participant speaks, as well as how long the participant is  
15 spoken to.

16 The counter feedback data is continuously recorded and sent to the statistical methods  
17 module 118 (FIG. 1) which analyzes the feedback data according to pre-programmed statistical  
18 methods, and reports of that feedback are sent to the participant and to the leader. For example,  
19 the data may be analyzed using Round Robin Analysis of Variance which determines whether  
20 there are Actor Effects (do some people talk more than others), Partner Effects (do some people

1 elicit more talking than others), or Relationship Effects (do some people talk more to certain  
2 people than to others)?

3       The activity counter 116 report only provides information about that participant. The  
4 activity counter report may also provide averages so that the participant can compare his or her  
5 activity level with the average. The Leader Report provides the information about all  
6 participants. FIG. 7 shows a sample participant counter activity report in the simultaneous access  
7 window 406. This report could alternately appear in the Personal Activity Box 420 in the  
8 interaction matrix only configuration of the system.

9       Ratings Module: The system 100 may further include a rating module 120 (FIG. 1),  
10 which may be used by the group leader to solicit feedback from the group. The rating module  
11 120 presents a special screen in the interaction matrix which prompts the leader to enter a  
12 feedback question and provide a rating scale or a series of multiple choice responses. For  
13 example, as shown in FIG. 8, the leader could write, "On a scale from 1 to 9, how satisfied are  
14 you with today's group meeting?" The Ratings Screen in the interaction matrix provides a place  
15 for each group member to make his/her rating. In the ratings screen, the entire group can see how  
16 each member has rated the question. This provides an excellent way for group members to obtain  
17 information about how other people are feeling and to compare his/her own ratings with the  
18 other group members.

19       All the ratings are sent to the Statistical Methods Module 118 to be analyzed according to  
20 pre-programmed statistical methods. Then reports are sent to the Leader and to each participant  
21 with results (e.g. your rating was 7, and the average rating on this question was 5).

FIG. 8 shows the Ratings screen in the interaction matrix 408, and FIG. 9 shows a Personal Feedback Report in the simultaneous access window 406.

### Recording Module

According to one aspect of the present invention, the system 100 includes a recording module 122 which provides the leader with the ability to record the communications (voice and text) and then re-play the communications and communications flows back to the group. The purpose of this feature is to allow group members to go through a training exercise (like a role-play) and then observe themselves after the role-play is completed through the playing back of the communications. This re-play technique is often used in teaching people how to do psychotherapy or how to improve interpersonal skills. It is very difficult to pay attention to oneself while in the process of role-playing or acting out other therapeutic techniques. This process can also be very helpful for teaching group process and dynamics to participants.

### Simultaneous Access Window Block

The simultaneous access window 406 is an interface or window used to display programs and documents on the system. There are four categories of files that the simultaneous access window 406 displays: "Individual accessed" (personal) programs (like a user's personal on-line workbook); "shared group-specific accessed" programs (like closed chat-rooms, group bulletin board, participant "Bios" or homework assignment list); "Leader Accessed programs/files" (like controls for running structured group programs or setting interaction matrix controls); and



1 “system-wide accessed” programs (like open access chat rooms, scheduler, or outside internet  
2 links). Each of these programs is explained in detail herein below.

3 The system 100 of the present invention allows a user to be participating in a group  
4 activity in the interaction matrix 408 while simultaneously viewing whatever documents are  
5 being presented in the simultaneous access window 406. When a group is in session and the  
6 group leader is presenting material in the simultaneous access window 406, that material appears  
7 in the Window for all group participants. The group leader has the controls to choose which  
8 programs are presented in the simultaneous access window 406. However, if a participant wants  
9 to access a different program than what is being presented, she simply clicks on the desired  
10 program in the drop-box of the simultaneous access window, and that selection then appears in  
11 the window, covering up what is being presented to the group as a whole by the leader. To return  
12 to the group presented material in the simultaneous access window 406, she simply closes the  
13 file.

14 The simultaneous access window 406 can present many different types of materials,  
15 including any document file, PowerPoint presentation file, video clip, digital photographs, and  
16 the structured group programs of the present invention.

17 It should be noted that the ability to “see” the group members with whom one is  
18 interacting through the interaction matrix 408 while also viewing shared documents or  
19 presentation materials in a closed virtual group meeting room is unique to the present invention.  
20 Also, the ability to access programs and files in the simultaneous access window 406 without

1 having to leave the group discussion in the interaction matrix 408 is also a unique aspect of this  
2 invention.

3 Assessment Module: The system 100 may optionally include an assessment module 124  
4 (FIG. 1) which enables group members to complete assessment tools in the simultaneous access  
5 window 406, have these measures analyzed, and reports sent to the leader and participants.

6 These assessments may be standardized measures of some variable (e.g., the Beck  
7 Depression Inventory), or they may be questionnaires that have been made up by the group  
8 leader (or programmed into the structured group program). These questionnaires or standardized  
9 assessment tools are presented in the simultaneous access window 406. The participant "fills  
10 out" the assessment tool by, for example, entering answers with the keyboard 300. The data from  
11 these assessments is analyzed by the Statistics Methods Module 118 and feedback reports are  
12 provided to the group leader.

13 Optionally, the feedback reports may also be provided directly to participants. Other  
14 times, the leader shares results with each participant individually or through the within group e-  
15 mail system. The assessment module 124 and/or the Statistical methods module 118 may be  
16 programmed to score any particular assessment measure, monitor and perform any desired  
17 statistical manipulations on the data retrieved.

18 An example of an assessment measure presented in the simultaneous access window 406  
19 is the Post-Group Questionnaire (FIGs. 16A, 16B) . This instrument asks group members to rate  
20 their feelings toward other group members, among other things. But the Post-Group  
21 questionnaire may also include written answers that are organized in a special report for the

1 Leader of the group. Examples of questions requiring written answers might include, “Is there  
2 something that you feel is holding you back from accomplishing your goal?,” or “What was the  
3 most important feedback you received today in the group meeting?” The purpose of the  
4 assessment module 124 is to provide a way for individual assessment of each participant which  
5 is not viewed by other group members (as is the case with the Ratings screen described earlier).

6 FIG.16C, shows an example of the Leader’s Post-Group Feedback Report. The report  
7 provides information about group rating data about how close each group member feels to every  
8 other group member (Question 1). The data is arranged in a response grid which can be analyzed  
9 using Round Robin Analysis of Variance to determine whether there are Actor Effects  
10 (individual differences in how close each group member tends to feel towards others, Partner  
11 Effects (individual differences in how close other group members tend to feel toward each group  
12 member—how much “closeness” each member elicits), and relationship effects (are there special  
13 adjustments that members make in their usual level of closeness depending upon the person they  
14 are reporting about?). The Leader’s Feedback Report from the Post-Group Questionnaire also  
15 summarizes written answers to questions by all the group participants.

16 The assessment module 124 allows the group leader to assess progress of each participant  
17 according to standardized measures. The information retrieved from assessment measures (e.g.  
18 the Post-Group form) can also help to guide future interactions in the group. For example, if a  
19 member has stated on a post-group form that she would really like to get to know a specific  
20 member of the group better, then the group therapist, knowing that information, could facilitate  
21 interactions between the two group members in future group meetings.

1 Virtual Meeting Place (Office): As noted above in the Background of the Invention, many  
2 businesses would like to be able to hold meetings and seminars over computer networks.  
3 However, currently available systems for holding meetings have a number of problems. The  
4 system of the present invention solves the problems associated with holding business meetings  
5 over computer networks. Specifically, the system allows the meeting participants to “see” each  
6 other in the interaction matrix 408 while simultaneously viewing presentation materials together,  
7 working on shared group documents, and moving from one virtual meeting space to another to  
8 meet the demands for attending multiple meetings in disparate locations.

9 Notably, the system 100 may include a shared virtual meeting place module 126  
10 providing a plurality of virtual meeting rooms. The virtual meeting rooms may be public or  
11 limited access (password protected). If desired, the shared virtual meeting place module 126 may  
12 include a virtual floor plan (FIGs. 17A, 17B) graphically depicting a plurality of virtual rooms,  
13 showing which rooms are occupied, and which rooms are available, and then clicking the  
14 “Enter” button 181 to enter the selected virtual group meeting place. Following is an example  
15 that will be used to explain this feature in detail. The system 100 is also equipped with a Room  
16 Scheduler 128 (FIG. 1) which allows users to schedule the available virtual rooms ahead of time  
17 and indicate the persons who are scheduled to participate in meetings held in the virtual rooms.  
18 Rooms may be reserved so that people working on a long term project may come in and out of  
19 the virtual room over time. In that case, the room would be scheduled for a block of time.

20 The virtual meeting place feature of the present invention will be better understood with  
21 reference to the following example in which a managed behavioral healthcare business. FIG. 18

1 shows a group of employees (Carol, Gary, Bob, etc.) scheduled to attend one of two concurrent  
2 meetings (“A” Group and “B” Group”), and a boss (Vivian) monitoring both meetings.

3 The “A” Group (meeting in Virtual Room #1) is working through a structured group  
4 program on Customer Service. The “B” Group (meeting in Virtual Room #2) is having a team  
5 meeting focussed on claims processing.

6 To access a particular meeting, a user simply clicks on the “enter” button 181 for that  
7 virtual meeting place.

#### 8 Viewing Presentation Materials Together

9 As shown in FIG. 19, a group is viewing presentation materials together in the  
10 simultaneous access window 406 while participating in the group interaction matrix 408. In the  
11 example depicted, Group A is working through a customer service training program on “Taking  
12 Complaints”. This training program advises the customer service representative to get identifying  
13 information about the caller, among other things. The participants discuss these materials in the  
14 interaction matrix 408 and are directed to try a role-play in order to practice what they have  
15 learned about taking complaints. The ability to view presentation materials together in the  
16 simultaneous access window 406 while discussing them in the interaction matrix 408 makes the  
17 system 100 of the present invention ideal for providing employee training programs, academic  
18 courses, and self-improvement groups. The material that is presented may be any type of  
19 documents, video clips, films, digital photographs, PowerPoint presentations, or the structured  
20 group programs of the present invention.

1 In FIG. 20, a Complaint exercises program is displaying Role Play #1 in the simultaneous  
2 access window 406. In the example provided, Pete is speaking in the interaction matrix 408,  
3 saying, "Joan, I'd like you to play the role of the angry caller. Gary, I want you to play the role  
4 of the customer service representative."

5 FIG. 21A and 21B show that Group B is working on an action plan for improving claims  
6 processing in the Company. Writing the action plan requires that the group use the shared  
7 document feature of the simultaneous access window 406 which enables a group of members to  
8 view a document being edited by one of the members while simultaneously communicating via  
9 the interaction matrix 408.

#### 10 Communications Control Center Block

11 The communications control center 404 provides access to a number of features including  
12 a Virtual Group Room "Door" Messaging Feature, and an Observer Window Feature.

13 The Virtual Group Room "Door" Messaging Feature enables the group leader (or  
14 Operator) of the system to receive messages from visitors without having to exit any group  
15 activity in which he/she is participating.

16 This feature is illustrated in FIG. 19, which depicts members of a managed behavioral  
17 healthcare company in a meeting. As shown, a given member, Vivian, has received a message  
18 through the Communications Center at her office "door". She sends a message back to the person  
19 at the "door" and decides she needs to leave the meeting.

1 If the facilitator/leader is present and chooses to invite the visitor into the virtual group  
2 meeting room, then the Operator clicks on the visitor's name, then selects "TRANSFER" from  
3 the menu in the Communications Center 404, and finally on the "seat" 410 in the interaction  
4 matrix 408 where he/she wants that visitor to go. The visitor has then entered into the group  
5 room interaction matrix 408 and is able to communicate and share documents as if they were  
6 actually in the same room together. Moreover, an occupant may have plural visitors  
7 simultaneously. However, they must be transferred into the interaction matrix 408 one person at  
8 a time. (Or alternately, they may enter the group room by password.)

9 Observer Feature: According to another aspect of the invention, the system 100 may include an  
10 observation feature, whereby the group leader (facilitator) may permit visitors to observe group  
11 interactions. Optionally, the visitors would be invisible to the group, and only able to  
12 communicate with the leader, with communications between the visitors and the leader being  
13 invisible to the group. The observer feature allows the leader/operator of the program to create a  
14 virtual "observation window" for people who want to learn about group processes. This feature  
15 also makes it possible to have rolling membership to open chatrooms or structured group  
16 meetings.

17 The preceding examples clearly demonstrate the system's significant advantages for  
18 business. Specifically, the system allows businesses to hold meetings in virtual spaces while  
19 being able to "see" all the participants, to view presentation materials together, and to share  
20 group documents. There is no currently available teamware or telephony system that provides  
21 these unique and useful features.

## Method For Providing Structured Group Programs

As discussed above in the Background of the Invention, there are serious limitations to the current methods of providing structured group programs (or skills training programs) over computer networks, as well as problems with existing methods of computerized group discussion in general.

The system 100 of the current invention overcomes many of the shortcomings of conventional systems by:

- Organizing Material Presented in Group Programs;
- Teaching Group Communication Skills and Providing Opportunities for Practice;
- Giving and Receiving Appropriate Feedback;
- Strengthening Group Cohesion;
- Providing a Place for Keeping Personal Records and Materials;
- Providing a Setting Where Group Participants Can View Presentation Materials Together;
- Providing Ways for Group Members to Work Together Outside of Regularly Scheduled Meetings;
- Providing Tools for Group Leaders to Manage Group Process; and
- Providing Website or System-Wide Programs (like a Scheduler/Matcher, a Resource Directory, a Professional Leaders Registry, Open Access Bulletin Boards and chatrooms, etc.) to meet the needs of the general population accessing the group services delivery system.



Each of the above-listed components of the system of the present invention for providing structured group programs over computer networks is described in detail below.

### Organizing Material Presented in Structured Group Programs

The system provides organization through the structured group programs it offers. The structured group programs of this system consist of presentation or lecture materials, special training exercises, group prompts, response matrix vocabularies, assessments & feedback measures, and an on-line workbook all related to a specific topic. Thus, presentation materials are organized and presented in a way that is unique to this system.

For example, a structured group program focused on the topic of improving social skills may include lecture material about what the different types of social skills are (like making a request, saying “no”, or meeting someone new). The Training Exercises in this social skills program might present different social situations to participants and have them practice assertive responses. The response matrix 412 in this social skills program could be customized to include a list of things to consider when responding assertively in those situations (like what are your objectives, what is the relationship, what are your rights, etc.). The social skills program may have a Social Anxiety Assessment Inventory as part of the program to help give the leader and the participant information about changes in social anxiety as the program progresses. Further, the social skills program workbook could provide homework assignments that instruct participants to seek out challenging social situations in the real-world, practice newly learned

1 skills, and keep track of all of the challenging situations they encountered and how they handled  
2 the situation, and report back to the group.

### 3 Teaching Group Communication Skills and Providing Opportunities for Practice

4 The system 100 provides a convenient way of teaching group communication skills and  
5 providing opportunities for practice through the group training exercises, group prompts, and  
6 modifications that can be made to the response matrix vocabulary list. FIGs. 24A and 24B show  
7 sample materials for an interaction training manual.

8 The set of group training exercises provide opportunities for practice by listing different  
9 role-play situations for group participants to act out during group meetings. In addition, the items  
10 of the response matrix 408 can be programmed to correspond with specific training exercises.  
11 For example, one training exercise teaches people about different ways of responding to different  
12 types of statements by another person. One such statement that is included in the role-play  
13 exercises is, "I spent all that time interviewing and negotiating for that job, and now they say  
14 there isn't even a position any more." Some of the types of responses, also provided as items in  
15 the response matrix under the heading "Response Styles", include the detective style, the  
16 foreman style, the magician style, and the swami style. By practicing different response styles,  
17 participants learn about their own styles of responding, their reactions to the responses they hear  
18 from others, and possibly, which new responses they wish to incorporate into their repertoire.

1 The list of prompts is a list of statements, (typically prepared by the Leader), that may  
2 help facilitate group interaction or acquiring new skills related to the topic of the program. The  
3 following are examples of Prompts:

4 “It seems like things are happening very fast. Why doesn’t someone summarize  
5 what has happened over the past 5 minutes.”

6 “The group seems to be breaking up into several different segments, with several  
7 people forming a sub-group. What do you think that is about?”

8 “What do you think is getting in the way of your following through on your  
9 plan?”

10 If a user clicks on the list of Prompts and wants to use one of the statements in the ongoing group  
11 discussion, all she has to do is copy the statement to her Personal Activity Box 420 where it can  
12 be edited and then sent as a message in the Interaction matrix 408.

### 13 Giving and Receiving Appropriate Feedback

14 The system provides ample sources of giving and receiving appropriate feedback. As  
15 discussed in an earlier section, participants rate their satisfaction with the group via the ratings  
16 module 120 (FIG.1). This data is analyzed by the statistical methods module 118 and feedback is  
17 provided to each participant in Personal Feedback Reports (discussed previously). Information  
18 about each participant’s activity level in the interaction matrix 408 is recorded by the activity  
19 counter 116 and reported to participants and the leader in feedback reports (discussed  
20 previously). Special assessment measures can be given to all group participants, then scored by

1 the Assessment Module 124, and reported to the Leader and the participants (discussed  
2 previously).

#### 4 Strengthening Group Cohesion

5 The system 100 provides several features that strengthen group cohesion, or attraction for  
6 the group. Limited Access Virtual Meeting Rooms (Closed chat-rooms), blackboards and  
7 bulletin boards provide opportunities for group members to interact more frequently than is  
8 provided during scheduled meetings alone. More frequent positive interactions lead to greater  
9 group cohesion. In addition, the system provides a method for group members to be reminded  
10 about all of the other group members, as well as what their goals might be, and what homework  
11 they are currently working on. Having more information about group participants helps to  
12 strengthen group cohesion as well.

13 A bulletin board module 142 (FIG. 1) allows members of the group to post various  
14 articles or updates for the group. Preferably, access to the virtual bulletin board is limited to only  
15 the specific members of the group. FIG. 26 shows a sample screen print of a group viewing a  
16 closed bulletin board during a group meeting.

17 A chalkboard (blackboard) module 140 (FIG. 1) allows group members to draw on a  
18 virtual chalkboard screen with a pointing device such as a mouse or a light pen. FIGs. 27A and  
19 27B show sample screen prints of a group using a chalkboard during a group discussion.

20 Both the bulletin board and the chalkboard can be accessed while the participant is  
21 participating in a group activity in the interaction matrix 408. Participants access the bulletin

1 board and chalkboard (blackboard) by clicking on the "shared group access" file in the  
2 simultaneous access window 406.

### 3 Providing a Place for Keeping Personal Records and Materials

4 The system 100 includes a journal module 130 for storing and accessing personal records  
5 and materials.

6 The individual records or programs of the present invention include such things as the on-  
7 line work-book, personal notes, personal documents, attendance records, and personal feedback  
8 reports.

9 According to a presently preferred embodiment, the system 100 provides each participant  
10 with an on-line workbook for each structured group program. The on-line workbook may be  
11 accessed during group meetings through the simultaneous access window 406 without having to  
12 exit the group process.

13 The on-line workbook may consist of exercises, charts to monitor progress, a place to  
14 keep track of homework assignments, and a record of all the personal Feedback Reports received  
15 during the program. FIGs. 23A and 23B show sample on-line workbooks according to the  
16 present invention.

17 The system 100 includes a predefined (default) on-line workbook for all structured group  
18 programs. If desired, the on-line workbook may be customized by the group leader. Or  
19 completely new workbooks can be constructed and stored for later use on the system.

## Providing A Setting Where Group Participants Can View Presentation Materials Together

As discussed in a previous section, the simultaneous access window 406 provides a way for group members to view presentation materials together. These materials can be specially programmed to focus on a particular topic area. The presentation materials may consist of documents, video clips, PowerPoint presentations, live lectures, group training exercises, and special bulletin closed board materials.

## Providing Ways For Group Members To Work Together Outside Of Regularly Scheduled Group Meetings

The system provides two important ways for group members to work together and communicate outside of regularly scheduled group meetings: closed group meeting rooms (provided by virtual meeting room module 126) and within group e-mail system.

The closed group chat room feature allows the specific members of the group to use the system even when a regular group session is not scheduled. Thus, group participants are provided with a virtual meeting place where they can work on shared documents or projects and where they can communicate with each other in the interaction matrix 408 at all times.

According to another aspect of the present invention, a within group e-mail module 132 (FIG. 1) is provided to enable group members to send e-mails to other members of the group without having to exit the group interaction matrix 408. For example, if Don wants to send a within-group e-mail to Jeff, he simply clicks on e-mail, then on Jeff's name, then a box appears in the Simultaneous Access window 406, where Don can write the e-mail, and send to Jeff.

1 The within group e-mail system 132 is especially practical when a participant is working  
2 on a group project and realizes she has a question for a particular group member who does not  
3 happen to be in the closed chat room while she is there. In that case, she simply clicks e-mails  
4 the message without having to leave the interaction matrix 408.

5 Within group e-mail as a component of the overall system is also important for the  
6 Leader in particular. The Leader will often write notes to each group member at the end of a  
7 group meeting. These notes may be responses to questions that participants have asked on the  
8 Post-Group questionnaire. Or the Leader may simply want to ask the individual participant a  
9 question about his reaction in the group (ex parte communication, so to speak).

10 The within group email system 132 plays an important role in facilitating communication  
11 between members of a closed group who want to communicate anonymously, withholding  
12 information about their identity and regular email address from the group members. It is a  
13 common practice to engage in on-line discussion groups and chatrooms while remaining  
14 anonymous. The within group email system allows members to communicate outside regularly  
15 scheduled group meetings without compromising anonymity.

16 Therefore, while e-mail per se may be ubiquitous, it has an important role in the overall  
17 system of this invention for providing structured group programs over computer networks.

### 18 Providing Tools for Group Leaders to Manage Group Process

19 The system provides several tools for leaders to manage and direct the group process.  
20 The "Leader Access" heading in the simultaneous access window 406 drop-box lists all of the

1 programs that the Leader controls in the system. The leader controls what structured group  
2 programs will be “played” and navigates through the various screens of each of the programs  
3 which are displayed in each participants shared access window 406. The leader controls when  
4 the Ratings screen appears in the interaction matrix, as well as when assessment measures appear  
5 in the simultaneous access window 406. The Leader receives special Feedback Reports that  
6 combine the information about all group members into one report, facilitating the understanding  
7 of the group’s dynamics. The leader also sets the format for the interaction matrix 408 and the  
8 closed meeting rooms described above. In addition, the Leader may use the within group e-mail  
9 system to communicate individually with each group member if desired.

#### 10 System-Wide Features

11 As described above, the system 100 may include a Scheduler 128. In addition to  
12 scheduling virtual meeting rooms, the scheduler 128 may provide a list of group offerings and  
13 meeting times, and enable users to register for a particular offering. For example, users may be  
14 provided the option to select a Lay Group, or a Professionally Led group. They can choose to  
15 participate in a group with Written Only Format, or Voice Only Format, etc. They can choose to  
16 sign up for a heterogeneous or homogeneous group. See, e.g. FIGs. 25A-25C.

17 The system 100 includes a security module 134 (FIG. 1) which includes, among other  
18 things, a password system for individuals to sign on to groups having a restricted access (such as  
19 closed groups with the same membership and group leader meeting over an extended period of  
20 time.) When signing onto the group, the participant will enter his/her own password and the



1 group password, which will give him access to one of the positions on the group interaction  
2 matrix 408

3 A Professional Leaders Registry 136 (FIG. 1) provides a list of professionals who are  
4 leading groups on the system 100. The Registry 136 provides information to the customer as to  
5 the qualifications of professionals, and it will also provide a format for professional leaders to  
6 “advertise” their services to the public. Only those people who have received training in leading  
7 groups will be permitted to register. The Registry 136 contains biographical information about  
8 the registrant as well as what groups (and what time-slots, number of group meetings) each  
9 registrant is leading or will lead, and provides a sign-up sheet for visitors to reserve a space in  
10 each group. User’s access the Professional Leaders Directory 136.

11 A Resource Directory 138 (FIG. 1) contains reviews of publications in the fields of  
12 business, health, psychology, and self-improvement. In particular, the reviews will summarize  
13 how each publication can be useful in the pursuit of self-improvement. The Resource Directory  
14 138 may also be customized to include literature reviews of only those publications that have  
15 direct relevance to the topic of the specific training program.

#### 16 Creating New Structured Group Programs

17 The system 100 provides a convenient structure for creating new self-contained  
18 structured group programs. Notably, the various modules/components may be customized to  
19 focus on a specific training topic. Specifically, the presentation materials, the response matrix  
20 412 vocabulary (feedback responses), the Resource Directory 138, the on-line workbooks, the  
21 group prompt statements, the Ratings prompts, and the assessment questions may all be

1 customized to provide a self-contained complete program focussed on a particular training topic  
2 and stored for later use.

3 By manner of illustration, FIG. 22 shows an example of how the structured group  
4 components are customized for a group-supported goal attainment program and a group-  
5 supported social skills training program.

#### 6 Specific Application: Group-Support Goal Attainment Program

7 As discussed above in the Background of the Invention, there are very few structured  
8 group programs focussed on self-improvement that are offered for the general population of  
9 internet users. Most group programs are offered to people having serious emotional problems or  
10 addictions. Many people do not want to participate in programs like these because of the stigma  
11 attached.

12 The specific group-supported goal attainment program of the present invention fills an  
13 important gap in needed psychological services in the internet community. Offering this program  
14 in the context of a full service, large scale internet site (with components such as a  
15 scheduler/matching system, password access system, professional leaders directory, resource  
16 directory/search engine, bulletin boards, closed chat-rooms, security and customer service  
17 review) ensures that user needs for these psychological services are effectively met.

18 The system 100 of the present invention may be used for a variety of applications  
19 including the creation of virtual meeting spaces ( "virtual office"), group counseling, and more.  
20 A specific application of the invention is the Group-Supported Goal Attainment Program which  
21 is described in this section.

1       The two main objectives of the Group-Supported Goal Attainment Program are 1) to  
2 teach the user skills in group interaction and support, and 2) to focus every group member's  
3 attention on specific self-improvement goals that he/she has chosen (e.g. improve fitness,  
4 improve work relationships, give up a bad habit, take on a new hobby, etc.) The program is  
5 similar to the concept of what a "Goals Anonymous" group might look like, although it is not  
6 based on the 12-Step Model of "Alcoholics Anonymous".

7       The program encourages people to write down their goals, learn what resources are  
8 available to them, develop a strategy for attaining each goal, and make regular assessments of  
9 their progress. It is generally thought that getting a goal down in writing makes it more concrete  
10 and increases your sense of commitment, creating a contract with yourself." It is also likely that  
11 writing goals down produces a greater sense of "cognitive dissonance" or discontinuity between  
12 what one's stated objectives are and how one is actually behaving. Letting the group members  
13 know what one's goals are also increases the dissonance between what is being said versus what  
14 is being done about a specific issue. For example, if John writes down that he wants to cut down  
15 on his television viewing (and perhaps tells his goal support group about his goal), then he is  
16 more likely to experience discomfort if he finds himself sitting in front of the television. for  
17 hours one afternoon. Hopefully this dissonance will motivate John to get up and do something  
18 else.

## Steps of the Group-Supported Goal Attainment Program

The Goal Attainment Support group has specific steps for attaining personal goals which are outlined below:

- a) complete specially developed assessment measures to help identify areas in their lives where they would like to improve or change;
- b) list specific goals aimed at addressing the areas identified for self-improvement;
- c) monitor thoughts, behaviors and events associated with the desired changes;
- d) set up step-by-step action plans for attaining each goal;
- e) perform periodic assessments of the progress made on each goal;
- f) complete on-line training modules in group process, leadership and helping techniques;
- g) participate in on-going self-improvement support groups composed of the same group members meeting over time;
- h) receive instant goal support services when needed at open-membership "Goals Attainment Support" (GAS) meetings;
- i) review any special instructional materials presented during the group meetings;

## Specific Workbooks, "Prompts" and Training Modules:

The Group-Supported Goal Attainment Program includes all of the components of the structured group program described in a previous section of this application. Specifically, the program has a special workbook, group prompts, and sets of training exercises.

1       The workbook encourages people to write down their goals, learn what resources are  
2 available to them, develop a strategy for attaining each goal, and make regular assessments of  
3 their progress.

4       The “Prompts” provided by the program are a list of possible statements to be used when  
5 the group is “stuck” or doesn’t know what to do next. They include many statements that refer to  
6 the group process as well as statements that are specific to goal attainment strategies.

7       The Group-Supported Goal Attainment Program of this invention incorporates group  
8 interaction training programs which provide information about group dynamics, group “curative”  
9 factors, different types of listening styles, different ways of responding, special group techniques  
10 for facilitating interaction (like role-playing and the “empty chair” technique), and stages of  
11 group development. The training program will allow a training group to observe demonstrations  
12 of the different concepts, and then practice engaging in the various interaction techniques  
13 together. This training is offered to open as well as closed membership groups. People who  
14 participate in open training groups will gain valuable experience for working on their goals  
15 should they decide to participate in an ongoing group supported goal attainment program.

16       An example of a specific training program was described in an earlier section. It involved  
17 learning about different styles of responding (e.g. “detective”, “magician”, “foreman”, etc.) and  
18 practicing them with other group members in role play exercises.

19       Because the group-supported goal attainment program is integrated into a full service,  
20 large scale website that utilizes the enhanced system of computerized group interaction of the  
21 present invention, the experience of participating in the program can be powerfully rewarding.

## Business Applications Of The Present Invention

In view of the many shortcomings of existing systems of computerized group interaction and group discussion outlined in the Background section of this application, businesses have not been that interested in using the internet to offer group services to the potential customers. However, the system of this invention makes it possible for businesses to deliver high quality, authentic group services over the internet and over virtual private networks as well. Businesses that regularly utilize group presentation formats for delivering services will benefit particularly well from having their group activities hosted on a system according to the present invention. Some of these specific business applications of the website version of the system of interactive technology include the following:

Healthcare organizations (including managed care, hospitals and public health agencies) will benefit from being able to offer specially tailored group outreach programs to their clients with the capacity for maintaining a “personal file” or medical record for each client. For example, a hospital could host a pre and post surgery support group for breast cancer patients allowing them to monitor each patient, provide important information regarding treatment options, and deliver professionally led support services.

Large Psychotherapy Practices could benefit from providing internet group support programs as an adjunct to other face-to-face therapy services. Providing free or reduced fee groups on the host website would be a very good way of advertising the kinds of therapists and services

1 available at a particular practice as well as reaching a much broader clientele than is possible in  
2 “real-world” practice alone.

3 Community support groups could reach a much larger audience by offering groups on the host  
4 website. Weight Watchers and alcoholics Anonymous, as well as groups for people suffering  
5 from emotional & physical disorders, groups for people wanting to quit smoking, and MADD  
6 and SADD are a few examples of community-based groups that could benefit from offering  
7 services via GroupOptions.com.

8 Academic, research and policy organizations could set up seminars and policy work groups on  
9 an on-going basis reaching members from different institutions across the entire country.  
10 Universities could offer courses that require lecture presentations and discussion segments, and  
11 students could take tests and submit assignments via their personal file which could be accessed  
12 by the instructor. Foreign language courses could be adapted remarkably well to this format.  
13 Research organizations (like NIMH) could set up studies with participants from all over the  
14 world. For example, researchers could study group process and its impact on different  
15 psychological problems by analyzing interaction data obtained from the operation of the system  
16 of the present invention, along with assessments and feedback reports provided by group  
17 participants.

1 The Department of Juvenile Justice could hold on-line probation groups for teens where they  
2 could work through the group-supported self-improvement program (and other required  
3 materials) while being closely monitored by probation officers. DJJ has a rehabilitative mission,  
4 and this kind of structured group interaction has been found to be a powerful intervention for  
5 teenagers. In fact, this approach could be highly effective for prisoners and parolees in many  
6 different institutions, since participants in on-line groups would allow for social interaction and  
7 rehabilitative efforts without the risk of actual physical proximity required in “real-life” group  
8 settings.

9 Publishers and authors of self-improvement and popular psychology literature could lease space  
10 on GroupOptions.com at the same time that their books are being published, thus providing an  
11 immediate setting for people to “work through” and practice the book’s prescribed activities in a  
12 supportive, anonymous, and entertaining group environment. This approach would be  
13 particularly well suited to books that use a serialized format for helping people make  
14 improvements in their lives.

15 Producers of business education & professional continuing education seminars and literature will  
16 want to distribute special “workbook” versions of their programs on the host website. This  
17 format would be especially useful for programs teaching business management and leadership  
18 skills which are best developed in a group setting.



1           While various embodiments of the present invention have been shown and described, it  
2   should be understood that other modifications, substitutions and alternatives could be made  
3   without departing from the spirit and scope of the invention, which should be determined from  
4   the appended claims.